Remarks

Pending in the application are claims 1-25, of which claims 1, 16 and 21 are independent. The following comments address all stated grounds for rejection and place the presently pending claims, as identified above, in condition for allowance.

Rejection of Claims 1-4, 12, 14-22 and 24 under 35 U.S.C. §103

Claim 1-4, 12, 14-22 and 24 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent Application Publication No. 2002/0097671 ("Doverspike") in view of U.S. Patent No. 6,324,162 ("Chaudhuri"). Applicant respectfully traverses the rejection for the following reasons.

Doverspike and Chaudhuri fail to teach or suggest all of the claim limitations

Independent claim 1 is directed to a method for mesh restoration for an optical network with a plurality of nodes and a plurality of links. In the method of claimed invention, a backup path is activated for a working path in response to a fault along a working path. After the recovery of the fault, the links on the backup path are released and the attributes defined for the released links are adjusted along the backup path so that the released links are made available for other backup paths. Independent claims 16 and 21 recite like limitations. Claims 2-4, 12, 14-15, 17-20, 22 and 24 depend upon one of independent claims 1, 16 and 21.

Applicant submits that Doverspike and Chaudhuri do not teach the steps of *after recovery of the fault, releasing the links on the backup path, and adjusting the attributes for the released links along the backup path*, as recited in claims 1, 16 and 21.

The Examiner recognizes in the Office Action that Doverspike does not teach the steps of after recovery of the fault, releasing the links on the backup path, and adjusting the attributes for the released links along the backup path, as recited in the claimed invention. Chaudhuri is cited by the Examiner to compensate for the deficiencies of Doverspike.

Chaudhuri teaches that each link includes a working channel (16) and a restoration channel (18). See Chaudhuri, Figure 1. Chaudhuri also teaches that upon the failure of a working channel (16) on a link, restoration is accomplished by first attempting to route traffic on an restoration channel (18) in the same link when such a channel is available, and if such restoration can not be accomplished, then implementing a pre-computed path. See Chaudhuri, Abstract. Chaudhuri further teaches that after failed working channel is repaired, the connections of the restoration channels are released. See Chaudhuri, column 13, lines 63-66.

The Examiner asserts in the Office Action that releasing the connections of the restoration channels in Chaudhuri would involve adjusting the attributes of the released channels. Applicant respectfully disagrees.

In the claimed invention, *a set of attributes* are defined for each of the links. The attributes may include total bandwidth, SRLG– Shared Risk Link Group, bandwidth allocated to the working path, bandwidth reserved to the backup path, and weighted SRLG, as recited in claims 7-11. These attributes are described in more detail at page 6 of the pending application. After recovery of the fault, the claimed invention releases the links on the backup path, and adjusts *the attributes* for the released links along the backup path.

Although Chaudhuri teaches releasing the connections of the restoration channels after failed working channel is repaired, Chaudhuri does not teach adjusting the attributes for the released links along the backup path after recovery of the fault, as recited in the claimed invention. In Chaudhuri, releasing the connections of the restoration channels may involve adjusting at most *a single attribute* of the links whether the connections of the restoration channels are released or not released. Chaudhuri, however, does not teach adjusting *a set of attributes* for the released links along the backup path.

In light of the foregoing arguments, Applicant submits that Doverspike and Chaudhuri fail to teach all of the limitations of claims 1, 16 and 21. Claims 2-4, 12, 14-15, 17-20, 22 and 24, which depend upon one of claims 1, 16 and 21, are not rendered obvious over the cited prior art references. Applicant therefore requests the Examiner to reconsider and withdraw the rejection of claims 1-4, 12, 14-22 and 24 under 35 U.S.C. §103(a), and pass the claims to

allowance.

Chaudhuri Teaches Away From the Claimed Invention

Appellant submits that Chaudhuri teaches away from the claimed invention, and hence there is no motivation to combine Doverspike and Chaudhuri. The Examiner asserts in the Office Action that the motivation to combine these references is provided by the fact that the combination would afford rapid restoration. See the Office Action, page 3, lines 1-2. Applicant respectfully disagrees.

Chaudhuri specifically teaches that "accomplishing PBR using node-and link-disjoint restoration paths is *inefficient* in terms of maintaining sufficient spare capacity." See Chaudhuri, column 1, lines 45-47 (emphasis added). Chaudhuri also teaches that "link- and node-disjoint restoration path is a path (i.e., a collection of individual channels in a series of links, each coupling a pair of nodes) that does not share any link or any intermediate node with the original path." See Chaudhuri, column 1, lines 41-45. Chaudhuri is provided to overcome the problem of using node-and link-disjoint restoration paths.

The claimed invention, however, is directed to a restoration method that calculates a backup path for each working path between a first node and a second node in a network, wherein the backup path is *Shared Risk Link Group (SRLG)-disjoint* from the working path. In the SRLG-disjoint structure, the working path and the backup path share no common risk. See the pending application, page 8, lines 5-6. Chaudhuri, therefore, teaches away from the claimed invention, and hence there is no motivation to combine Doverspike and Chaudhuri.

In light of the foregoing reasons, Appellants submit that the Examiner fails to establish a case of obviousness, and request that the Examiner withdraw the rejection of the rejection of claims 1-4, 12, 14-22 and 24 under 35 U.S.C. §103(a), and pass the claims to allowance.

Rejection of Claims 5-11 under 35 U.S.C. §103

Claims 5-11 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent Application Publication No. 2002/0097671 ("Doverspike") in view of U.S. Patent No. 6,324,162 ("Chaudhuri"). Applicant respectfully traverses the rejection for the following reasons.

Claim 5-11 depend upon claim 1 and add further limitations to claim 1.

Applicant submits that Doverspike and Chaudhuri do not teach or suggest the steps of *after recovery of the fault, releasing the links on the backup path, and adjusting the attributes for the released links along the backup path*, as recited in claim 1. In light of this, Applicant submits that Doverspike and Chaudhuri fail to teach or suggest all of the limitations of claim 1. Claims 5-11, which depend upon claim 1, are not rendered obvious over the cited prior art references. Applicant therefore respectfully requests the Examiner to reconsider and withdraw the rejection of claims 5-11 under 35 U.S.C. §103(a), and pass the claims to allowance.

Rejection of Claim 13 under 35 U.S.C. §103

Claim 13 is rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent Application Publication No. 2002/0097671 ("Doverspike") in view of U.S. Patent No. 6,324,162 ("Chaudhuri"), and further in view of U.S. Patent No. 6,735,393 ("Zouganeli"). Applicant respectfully traverses the rejection for the following reasons.

Claim 13 depends upon claim 1 and adds further limitations to claim 1. Zouganeli is cited by the Examiner to provide teachings for the limitations added in claim 13. Applicant respectfully submits that the combination of Doverspike, Chaudhuri and Zouganeli does not teach or suggest the steps of *after recovery of the fault, releasing the links on the backup path, and adjusting the attributes for the released links along the backup path*, as recited in claim 1.

Zouganeli teaches an optical network including passive wavelength routers. Zouganeli also teaches that different router configurations can be used in optical networks and the routing functionality in the optical network can be done in the optical domain without switching elements at the nodes. Zouganeli, however, does not teach a failure restoration in the network. Furthermore, Zouganeli does not teach releasing links on the restoration path after the recovery of the failure in the network, and adjusting the attributes of the released links on the restoration path, as recited in the claimed invention.

In light of this, Applicant submits that the combination of Doverspike, Chaudhuri and Zouganeli fails to teach or suggest all of the elements of claim 1. Claim 13, which depends upon claim 1, is not rendered obvious over the cited prior art references. Applicant therefore respectfully requests the Examiner to reconsider and withdraw the rejection of claim 13 under 35 U.S.C. §103(a), and pass the claim to allowance.

Rejection of Claim 23 under 35 U.S.C. §103

Claim 23 is rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent Application Publication No. 2002/0097671 ("Doverspike") in view of U.S. Patent No. 6,324,162 ("Chaudhuri"), and further in view of U.S. Patent No. 5,636,203 ("Shah"). Applicant respectfully traverses the rejection for the following reasons.

Claim 23 depends upon claim 21 and adds further limitations to claim 21. Shah is cited by the Examiner to provide teachings for the limitations added in claim 23. Applicant respectfully submits that the combination of Doverspike, Chaudhuri and Shah does not teach or suggest the steps of *after recovery of the fault, releasing the links on the backup path, and adjusting the attributes for the released links along the backup path*, as recited in claim 21.

Shah teaches identifying fault locations in a communications network. In Shah, all nodes on a malfunctioned communications circuit of a communications network are enabled to identify the location of the fault causing the circuit malfunction. Shah, however, does not teach releasing links on the restoration path after the recovery of the failure in the network, and adjusting the attributes of the released links on the restoration path, as recited in the claimed

invention.

In light of this, Applicant submits that the combination of Doverspike, Chaudhuri and Shah fails to teach or suggest all of the elements of claim 21. Claim 23, which depends upon claim 21, is not rendered obvious over the cited prior art references. Applicant therefore respectfully requests the Examiner to reconsider and withdraw the rejection of claim 23 under 35 U.S.C. §103(a), and pass the claim to allowance.

Rejection of Claim 25 under 35 U.S.C. §103

Claim 25 is rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent Application Publication No. 2002/0097671 ("Doverspike") in view of U.S. Patent No. 6,324,162 ("Chaudhuri"), and further in view of U.S. Patent No. 6,606,427 ("Graves"). Applicant respectfully traverses the rejection for the following reasons.

Claim 25 depends upon claim 21 and adds further limitations to claim 21. Graves is cited by the Examiner to provide teachings for the limitations added in claim 25. Applicant respectfully submits that the combination of Doverspike, Chaudhuri and Graves does not teach or suggest the steps of *after recovery of the fault, releasing the links on the backup path, and adjusting the attributes for the released links along the backup path*, as recited in claim 21.

Graves teaches a cross-connect switch for switching optical signals, such as Dense Wavelength Division Multiplexed (DWDM) signals. Graves also teaches that the switch includes a switching matrix for each of the predetermined wavelengths of the DWDM signals. Graves, however, does not teach a failure restoration in the network. In particular, Graves does not teach releasing links on the restoration path after the recovery of the failure in the network, and adjusting the attributes of the released links on the restoration path, as recited in the claimed invention.

In light of this, Applicant submits that the combination of Doverspike, Chaudhuri and Graves fails to teach or suggest all of the elements of claim 21. Claim 25, which depends upon claim 21, is not rendered obvious over the cited prior art references. Applicant therefore

respectfully requests the Examiner to reconsider and withdraw the rejection of claim 25 under 35 U.S.C. §103(a), and pass the claim to allowance.

Conclusion

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

Applicant believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 12-0080, under Order No. SYCS-060 from which the undersigned is authorized to draw.

Dated: February 3, 2006

Respectfully submitted,

By 

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